Chemistry
Ticket Out the Door
Set 32: Reaction Stoichiometry Part 2

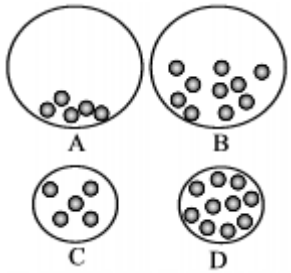
Name _____ Period _____

Skill 32.01 Problem 1

(a) Compare the kinetic energy of NH_3 to HCl at 25°C.
(b) Compare the velocities of NH_3 to HCl at 25°C.

Skill 32.01 Problem 2

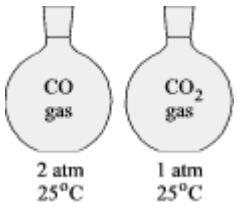
Consider the following diagrams representing different "gas" samples.



Which gas would behave most like an ideal gas? Explain.

Skill 32.01 Problem 3

Samples of CO(*g*) and CO_2(*g*) are placed in 1 L containers at the conditions indicated in the diagram.



(a) Indicate whether the average kinetic energy of the CO_2(*g*) molecules is greater than, equal to, or less than the average kinetic energy of the CO(*g*) molecules. Justify your answer.

(b) Indicate whether the average speed of the CO_2(*g*) molecules is greater than, equal to, or less than the average speed of the CO(*g*) molecules. Justify your answer.

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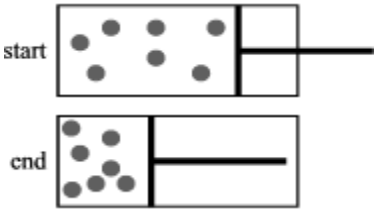
Skill 32.01 Problem 4

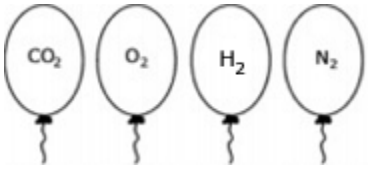
1. An ideal gas at 25°C was compressed at constant temperature as shown below. Explain the effects, if any, on each of the following:



(a) The kinetic energy of the molecules
(b) The speed of the molecules
(c) The density of the molecules

Skill 32.02 Problem 1

The balloons shown have identical volumes and are under the same conditions of temperature and pressure. Each balloon contains the same number of



(a) Compare the kinetic energy of the molecules in each balloon. Explain.
(b) If a pin-hole sized leaked developed in each balloon, which balloon would be the smallest after minutes? Explain
(c) If each balloon was popped with a pin, the molecules in which balloon would diffuse most quickly? Explain.

Name _____ Period _____

Skill 32.03 Problem 1

Under which conditions will helium gas behave most ideally? Explain. (a) 100 K and 1 atm (b) 200 K and 2 atm (c) 0 K and 0.5 atm (d) 200 K and .5 atm	Under which conditions will helium gas deviate the most from ideal behavior? Explain. (a) 100 K and 1 atm (b) 200 K and 2 atm (c) 0 K and 2.0 atm (d) 200 K and .5 atm

Skill 32.03 Problem 2

Which of the following (nonpolar) gases below will behave most ideally? Least ideally at STP? CO_2, H_2, Ar, N_2, O_2, C_2H_6

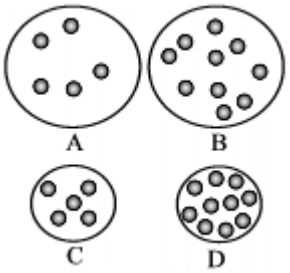
Skill 32.03 Problem 3

(a) Classify each molecule as polar or nonpolar (b) Which molecule will deviate the most from ideal behavior? The least? Explain. CO_2, H_2O, NH_3, Ar, He, H_2S

Name _____ Period _____

Skill 32.03 Problem 4

Consider the following diagrams representing different gas samples all at the same temperature.



Which gas would deviate most from ideal behavior?